

Notes on Twenty Additions to the Marine Fish Fauna
of Prov. Tosa, Japan, including One New Genus
(Family Peristediidae)

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(With one figure)

Recently the writer, with the assistance of students of the Kochi University and another person, secured many specimens of fishes at various localities in Prov. Tosa. The collection embraces 19 species which have never been reported from the province, and of which the following 3 seem to be new to the fauna of Japan:

Tylosurus leiurus (BLEEKER) (Belonidae) Formosa and southwards

Emmelichthys nitidus RICHARDSON (Emmelichthyidae) Philippines and southwards

Oxyurichthys tentacularis (CUVIER & VALENCIENNES) (Gobiidae) Formosa and southwards

The writer wishes to express his sincere gratitude to the students and the other person, whose collection has been a great contribution to the knowledge of the distribution of fishes. All the specimens, except that of *Abudefduf biocellatus*, which is preserved in the Kochi Prefectural Women's University, are deposited at the Biological Laboratory, Faculty of Literature and Science, Kochi University.

Gonostomidae

1. *Yarrella surugaensis* MATSUBARA Tamabuki-iwashi

Yarrella surugaensis MATSUBARA, Journ, Sigen, Ken., vol. 1 (1), 1943 p. 74, fig. 22.
Heta, Shizuoka Prefecture.

This species closely resembles *Yarrella illustris* (McCULLOCH), but differs from it in having the upper series of photophores on sides of body never straight, the posterior half elevated above the level of the anterior half. In the writer's specimens the anterior photophores are 9 in number, and the posterior ones 8.

Three specimens, 147 to 155 mm long, were obtained by Mr. Shinpei Yamamoto, a student of the Kochi University, at the Mimase Market, Kochi City.

Distrib. -Suruga Bay.

Belonidae

2. *Tylosurus leiurus* (BLEEKER) Taiwan-datsu

D. 18; A. 23. Body compressed; caudal peduncle somewhat higher than broad; head with rather wide median depression on frontals to cranium. Jaws not completely closing basally. Origin of dorsal above 7th divided ray of anal. Lateral line not forming a keel on caudal peduncle; caudal with very slight concave hind edge; lower lobe little longer than the upper. Color dull brownish generally, sides and below whitish and separated by dusky band extending from shoulder to caudal base medianly. Fins yellowish; tip of pectoral and hind part of caudal blackish.

Described from a specimen, 650 mm long, which was obtained at Urado Bay by Mr. Tadahiro Noda, a student of the Kochi University, who obtained another specimen, 202 mm long, at the same place.

Distrib. -Formosa to Africa and Micronesia.

Carangidae

3. *Trachurus declivis* (JENYNS) Taihei-maaji
Caranx declivis JENYNS, Voy. Beagle, Zool. III, Fish., 1841, p. 68, pl. 14. Princess
 Royal Harbour, King George's Sound.

Scutes 76 (39 + 37). Head 3.3 in length without caudal; eye 4 in head; snout 3.3. Head equal to depth of body; snout slightly longer than eye-diameter, which is sub-equal to interorbital space. Highest scutes on curved portion of lateral line somewhat higher than those on straight portion. Color greenish blue above, pale below.

A single specimen, 228 mm long, from Urado, Kochi City.

Distrib. -Uwajima to Formosa; Australia and New Zealand.

Serranidae

4. *Epinephelus fasciatus rhyncholepis* (BLEEKER) Shimofuri-hata

D. XI, 16; A. III, 7; scales about 90 in lateral line to caudal base and 12 more on latter; gill-rakers on first arch 8 + 14, finely spinescent, lanceolate, longer than gill filaments. Color pale brownish, each scale on body with minute gray white dot. A brown blotch on isthmus. All the fins brownish, more or less shaded darker brown terminally.

A single specimen, 287 mm long, from Kochi City.

Distrib. -Riu Kiu to Madagascar.

5. *Epinephelus merra merra* BLOCH Kanmon-hata

Color light brown, forming pale reticulating lines around variably hexagonal, pentagonal or rounded brown blotches. Numerous brown spots all over head and fins.

Three specimens, 80 to 130 mm long, from Okinoshima.

Distrib. -Hachijojima to Red Sea; Africa; Australia; Melanesia and Polynesia.

6. *Epinephelus tauvina tauvina* (FORSKÅL) Hitomi-Hata

Halocentrus salmonoides LKCÉPÈDE

D. XI. 15; A. III, 8; scales about 90 in lateral line to caudal base and 13 more on latter; gill-rakers on first arch 7-10 + 15. Color uniform brown, little paler below; back with 6 obscure darker cross-bars. Body, head and fins with well-spaced blackish spots, which are more sparse in young.

Two specimens, 132 and 231 mm long respectively, from Urado Bay, Kochi City.

Distrib. -Ogasawara to Riu Kiu; Red Sea; Africa; Australia; Polynesia and Hawaii.

Emmelichthyidae

7. *Emmelichthys nitidus* RICHARDSON Rōsoku-hachibiki

Dipterygonotus leucogrammicus KAMOHARA (non BLEEKER), Repts. Kochi Univ.,
 Nat. Sci., no. 1, 1951, p. 4. Mimase

D. XI-I, A. III, 10-11; L. 1. 75-85; gill-rakers on first arch 7-10 + 23-27. A specimen which has been identified by the writer with *Plagiogenion rubiginosus* (HUTTON) (Repts. Kochi Univ., Nat. Sci., no. 3, 1952, p. 50. Mimase) seems to belong to *Erythrocles schlegeli* (RICHARDSON).

Six specimens, 160 to 203 mm long, from Mimase.

Distrib. -Philippines to Africa; Australia and New Zealand.

Mullidae8. *Pseudupeneus indicus* (SHAW) Koban-himeji

D. VIII-I, 8; A. I, 7; scales 28-29 in lateral line to caudal base; 3 above, 6 below, 14 predorsal forward to nostrils; gill-rakers on first arch 3 + 18. First dorsal spine rudimentary. Color olivaceous-brown, paler below. Close above along lateral line, opposite interdorsal region, an oval yellowish spot, 2 scales deep and extending over 5 scales. Brown band along side of snout to eye, then up over postocular. An oval blackish blotch, about 3 scales in horizontal diameter, 2 scales in vertical diameter, in lateral line on posterior half of caudal peduncle.

A single specimen, 139 mm long, was obtained by Mr. Tadahiro Noda, a student of the Kochi University, at Urado Bay, Kochi City; four, 74 to 142 mm long, were obtained by Mr. Hirosaku Kitamura, a student of the Kochi University, at the shore of Nisshō, about 12 km east of Kochi City. He said that this species is rather common off Nisshō in november.

Distrib. -Yokohama to Red Sea; Africa; Australia and Polynesia.

Abudefdufidae9. *Abudefduf biocellatus* (QUOY & GAIMARD) Kinran-suzume-dai

A single specimen, about 10 mm long, was obtained by Assistant Professor Ishikawa, Kochi Prefectural Women's University, at the tide pool of Tei, about 25 km east of Kochi City.

Distrib. -Chiba Prefecture to the East Indies and Polynesia.

Callyodontidae10. *Calliodon ghobban* (FORSKÅL) Hi-budai

D. IX, 10; A. III, 9; L.1. 18+7; 6 predorsal, 2 rows on cheek, and one scale on flange below. Teeth white, lips cover most of plates; no canines. Color yellowish above, belly salmon; each scale of back and side with a blue spot. Back with 4 broad blue cross-bands. A blue band along upper lip, continued to below eye and further back to end of preopercle; some short blue bands radiating from hinder and upper border of eye; a blue band from upper anterior border of eye running over snout and joining that the other side. Dorsal rosy, edged with blue and with a row of blue round spots near the base; anal rosy, with a blue line along the base and margin.

A single specimen, 390 mm long, from Kochi City.

Distrib. -Riu Kiu to Red Sea; Africa; Australia; Micronesia and Polynesia.

Grammicolepidae11. *Grammicolepis brachiusculus* POEY Ōhishi-matodai

Grammicolepis brachiusculus POEY, Anal. Soc. Espanola Hist. Nat., vol. 2, 1873, p. 403, pl. 12, near Havana, Cuba.

Vesposus egregius JORDAN, Proc. U.S. Nat. Mus., vol. 59, 1921, p. 650, fig. 5. Hawaii.

Grammicolepis squamilineatus (in part), MOWBRAY, in Breder, 1927, Bull. Bingham Oceanogr. Coll., vol. 1 (1), p. 30, fig. 14, deep water north of Glover Reef, British Honduras.

Head 3.8 in length without caudal; depth 1.6; eye 2.4 in head; interorbital 4.2; snout 3.8; depth of caudal peduncle 3.8. D. VI-33; A. II-34; V. I, 6; P. 14; C. 1, 13, 1.

Body strongly compressed, its thickness about one-tenth its length. Dorsal with 6 spines, the first serrated and produced into filament, its length subequal to body length without head; the sixth also somewhat filamentous. Anal with 2 serrated spines, the first much produced into filament. Eye very large, longer than snout; mouth very small, oblique, the jaws equal; length of upper jaw about 8 in head. Preopercle with 2 ridges, both finely and evenly serrate; opercle rather short, without spine. Scales of body unique, each developed as a long thin vertical strip; similar scales on cheeks, opercles and gill membranes; scales on caudal peduncle small, rounded; fins scaleless. Lateral line curved upward on anterior half of body, straight and nearly horizontal behind. A row of stout hooked, immovable thorn-like spines along bases of dorsal and anal, these subequal in size; many black bony plates, each with a spine at the top, scattered on sides of body.

Color silvery, with many irregular dark blotches on body. Dorsal pale, with a brownish blotch at the posterior end; anal with 5 large blackish blotches; caudal blackish posteriorly.

A single specimen, 208 mm long, was obtained by Mr. Osamu Okamura, a student of the Kochi University, at the Mimase Market.

Distrib. -Owase, Mie Prefecture; Suruga Bay to Hawaii; Havana, Cuba and British Honduras.

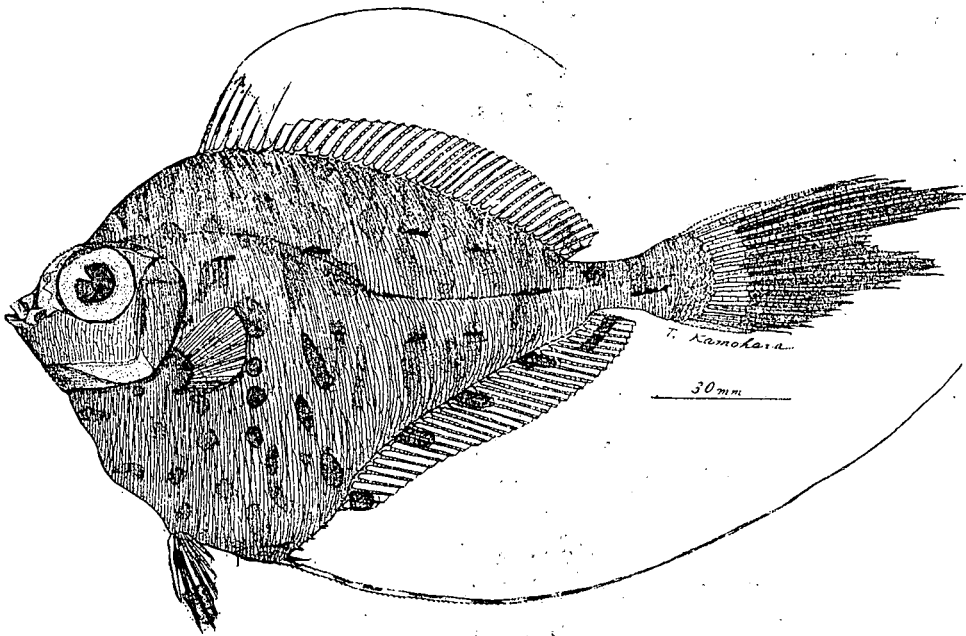


Fig. *Grammicolepis brachiusculus* POEY.

Peristediidae

Paraheminodus, n. gen.

Genotype. -*Satyrichthys laticephalus* KAMO HARA

This new genus is related to *Heminodus* SMITH, 1917 (Genotype. -*Heminodus philippinus* SMITH) in having the narrow band of teeth in upper jaw and the resembling external

form, but differs from it in having much developed barbels.

12. *Paraheminodus laticephalus* KAMOHARA Kōtō-kihōbō
Satyrichthys laticephalus (KAMOHARA), Res. Repts. Kochi. Univ., vol. 1 (6), 1952,
 p. 2, fig. 3, off Mimase.

The writer's detailed re-examination of the type of *Satyrichthys laticephalus* KAMOHARA has shown it to belong to a new genus for the reason of having the narrow band of teeth in upper jaw.

One specimen, 212 mm long, measuring from tip of rostral process to end of caudal, from off Mimase.

Pleuronectidae

13. *Kareius bicoloratus* (BASILEWSKY) Ishi-garei
 A single specimen, 297 mm long, from Kochi City.
 Distrib. -Sakhalin and the Kurile Islands to Honsyu; Formosa; Korea; and N. China.

Gobiidae

14. *Callogobius tanegasimae* (SNYDER) Tane-haze
 D. VI-15; A. 13. Head 4.3-4.5 in length without caudal; depth 7-7.1; eye 5-5.5 in head; snout 2.5-3.7; depth of caudal peduncle 2.2-2.5. Body elongate, sudcylindrical; caudal peduncle compressed. Head with conspicuous beaded dermal flaps and ridges which are definite and intricate in their arrangement; mucous pores of head with pronounced rims or tubes. Head entirely naked; breast, base of pectoral and axil naked; caudal sharply pointed and extremely long, 2.4-2.5 in body length. Color light brown, a large dark brown saddle over back at middle of spinous dorsal; the other one at base of posterior dorsal rays.

Two specimens, 62 and 72 mm long respectively, were obtained by Mr. Tadahiro Noda, a student of the Kochi University, at Urado Bay, Kochi City.

Distrib. -Tanegashima, Kagoshima Prefecture to the Philippines.

15. *Oxyurichthys tentacularis* (CUVIER & VALENCIENNES) Matsuge-haze.
Gobius tentacularis CUVIER & VALENCIENNES, Hist Nat. Poiss., 12, 1837, p. 128.
Gobius ophthalmonema BLEEKER Nat. Tijds. Ned. Ind., vol. 8, 1856-57. Ternate.

D. VI-13; A. 13; about 55 series of scales. Caudal much elongate and pointed, a little more than twice length of head. A low skinny crest on nape and a simple tentacle above each eye. Color pale yellowish gray; a diagonal white bar on base of pectoral; a dusky patch on top of caudal peduncle.

A single specimen, 95 mm long, was obtained by Mr. Tadahiro Noda, a student of the Kochi University, at Urado Bay, Kochi City.

Distrib. -Formosa to Burma; Melanesia and Polynesia.

Bembropidae

16. *Bembrops curvatura* OKADA & SUZUKI Nami-aitoragisu
Bembrops curvatura OKADA & SUZUKI, Rept. Fac. Fish. Pref. Univ. Mie, vol. 1 (2), 1952, p. 68, fig. 1, Owase, Mie Prefecture.

Head 2.7-2.8 in length without caudal; depth 6.6-7; eye 4.8-5.3 in head; snout 3-3.1; depth of caudal peduncle 5.3. D. VI-14; A. 15; P. 24; scales in lateral line 47-48; 2 above lateral line; gill-rakers on first arch 3-4 + 10-13.

Mouth large; maxillary extending beyond vertical from anterior margin of eye, provided with a long skinny flap at its tip. Lateral line descending abruptly in a catenary curve from near tip of opercular flap. Color light olive brown, with many scattered golden-yellow blotches, as large as pupil, on head and sides of body; a black spot, as large as pupil, on upper side near base of caudal.

Described from four specimens, 163 to 198 mm long, from Mimase, Kochi City.

Distrib. -Owase, Mie Prefecture.

17. *Bembrops filifera* GILBERT Itohiki-aitoragisu

Bembrops filifera GILBERT, Bull. U.S. Fish Comm. vol. 23, 1903 (1905), p. 643, pl. 84. Maui, Hawaii.

Bembrops filodorsalia OKADA & SUZUKI, Rept. Fac. Fish. Pref. Univ. Mie, vol. 1 (2), 1952, p. 70, fig. 2. Owase, Mie Prefecture.

Head 2.6-2.7 in length without caudal; depth 7.4-8; eye 4.3-4.8 in head; snout 2.7-3.1; depth of caudal peduncle 6.3-6.4. D. VI-15; A. 17; P. 27-28; scales in lateral line 63-64; 4 above lateral line; gill-rakers on first arch 5+14.

Snout very long, depressed, spatulate. Dorsal spines slender, flexible, the first produced into filament; caudal subtruncate. Color light olive brown, paler below; a golden-yellow spot on anterior part of preopercle, a fainter one on the flap; large golden-yellow blotches, as large as pupil, scattered on back of body; on lower half of side 9 dusky bands, narrower than the interspaces, running obliquely downward and forward. Anterior half of spinous dorsal blackish; lower edge of caudal blackish; a black blotch on upper side near base of caudal indistinct in larger specimens.

Four specimens, 188 to 240 mm long, were obtained by Mr. Shinpei Yamamoto, a student of the Kochi University, at the Mimase Market.

Distrib. -Mie Prefecture to Hawaii and Samoa.

Blenniidae

18. *Istiblennius luctuosus* (WHITLEY) Shima-ginpo

A single specimen, 66 mm long, was obtained by Mr. Hirobumi Yamashita, a student of the Kochi University, at Nagasasa, near Shimonokae, Kochi Prefecture.

Distrib. -Wakayama Prefecture to the Miyako Islands, near Formosa.

Zoarcidae

19. *Davidijordania abei* MATSUBARA Abe-genge

Davidijordania abei MATSUBARA, Zool. Mag. Tokyo, vol 48 (7), 1936, p.382, fig. Kumano-Nada.

Gobiesocidae

20. *Aspasma minima* (DÖDERLEIN) Ubauo

Color in formalin uniform reddish orange.

Two specimens, 24 and 25 mm long respectively, were obtained by Mr. Hirobumi Yamashita, a student of the Kochi University, at Nagasasa, near Shimonokae, Kochi Prefecture.

Distrib. -Kominato, Chiba Prefecture to Okinawa-hanto.